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Frederick D. Fox
Director, Environmental Affairs

Kennecott

August 5, 1994

AUG - 9 1994

Mr. D. Wayne Hedberg
State of Utah Dept. of Natural Resources
Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Dear Mr. Hedberg:

Enclosed is the Kennecott Utah Copper (KUC) proposal for the Land Application of Municipal Sewage Biosolids on the Bingham Canyon Mine Waste Rock Dumps. KUC would like to begin the application of sludge in September. Your assistance in providing a timely review and response is appreciated.

If you have any questions or require additional information, please call me at 801-569-6506. Thank you for your attention to this matter.

Very truly yours,


Frederick D. Fox

JC:jcc

Enclosure

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DIV. OF OIL, GAS & MINING

**Proposed Project for the
Land Application of Municipal Biosolids
at the Bingham Canyon Mine Waste Rock Dumps**

Submitted to the Division of Water Quality, the Division of Oil, Gas and Mining and Salt Lake County by Kennecott Utah Copper Corp.

Introduction

The Environmental Protection Agency published the final rules for the disposal of municipal sewage sludge on February 19, 1993 in the Federal Register, 40 CFR Parts 257, 403, and 503. These regulations were promulgated under authority of Sections 405(d) and (e) of the Clean Water Act, as amended. One circumstance of the regulations that has direct application to the needs of Kennecott Utah Copper (KUC) is the application of sewage sludge to the land for a beneficial use (as biosolids), i.e., for land reclamation.

Specifically KUC proposes to use anaerobically digested (Class B) sewage sludge from the Central Valley Water Reclamation Facility (CVWRF) as an amendment to enhance reclamation of selected areas of the Eastside Rail Waste Rock Dumps at the Bingham Canyon Mine. Thus, KUC requests approval for the land application of biosolids to the waste rock dumps as outlined in this proposal. The requested length of the project is for 5 years. KUC will evaluate the progress of the project at suitable intervals. The tentative date of first application will be September 1994 pending State approval, consistent with the application requirements of Section 503.

This proposal will focus on selected small areas of the waste rock dumps at the Bingham Canyon Mine. The project site location is shown on the attached map. This proposal follows the guidelines prepared and distributed by the Division of Water Quality so as to be in compliance with 40 CFR 503 regulations concerned with land application of biosolids.

Purpose

The purpose of the project is to determine the comparative success of vegetative growth with the application of biosolids to varying slopes on the waste rock dumps. The sewage sludge is intended for use as an amendment to provide a long term slow release of nutrients to the vegetation.

Description of the Site

The attached map shows 5 general test sites located on the 5816, 5960 and 6190 Eastside Rail Waste Rock Dumps. The property is owned by KUC and is fenced and locked from public access. The distance from the nearest dwelling and drinking water well is at least 1 mile.

The depth to ground water in the area is approximately 100 feet. All of the test areas are located in the existing waste rock dump areas. They are also located within the Eastside Collection System. This is a system of cut-off walls and toe drains that intercepts all water coming from the dumps. No meteoric water falling on and passing through the sewage sludge will enter into any drainages.

Work Plan

The work plan includes applying sludge to 31 test plots, 21' x 10', located at the lower end of the slope near the toe of the 5816 dump (maximum of 1/2 acre total). Additional test plots 1/4 to 1/2 acre in size may be constructed in the same area (maximum of 5 acres total). Test plots varying in size from 1/2 acre to 5 acres may be constructed on the 5960 and 6190 dump benches and slopes (maximum of 30 acres total). The approximate locations of these areas are shown on Dwg. No. 451-T-1218. Slopes on the various test plots will range from almost flat to 2 horizontal to 1 vertical.

Each area will have testing and control plots. A combination of testing and control plots will compare the relative success of sapling conifers and deciduous trees, shrubs and grasses on different slopes that have been treated with a one time application of sludge at the rate of 30 dry tons per acre. The two attached seed mixes (Mix I or Mix II) will be applied in some of the test plots at the approximate rate of 30 lbs/acre.

No commercial fertilizer will be applied initially. Fertilizer application will be evaluated based on vegetative success.

Vegetative success of trees and shrubs will be measured by survival and growth rates. Grasses and forbs will be measured by species survival and density in amendment plots compared to control plots.

The class B sludge will be supplied by the Central Valley Water Reclamation Facility (CVWRF). In addition, CVWRF could perform the necessary tests to certify chemical concentrations, pathogen densities, derivation of pathogen class, and methods used to meet vector attraction reduction requirements for its sludge. It should be noted that CVWRF Class B sludge has been approved for land application use at other Kennecott Corporation facilities such as the Barney's Canyon Mine and the Kennecott Utah Copper Tailings Impoundment.

MIX I

SPECIES	VARIETY	LBS/ACRS
Palmer Penstemon	Cedar	0.3
California Poppy	-	2.2
Blanket Flower	-	0.5
Lewis Blue Flax	Appar	2.2
Rocky Mt. Penstemon	Bandera	0.5
Munro Globemallow	-	0.3
Thickspike Wheatgrass	Critana	6.0
Western Wheatgrass	Rosanna	6.0
Slender Wheatgrass	Revenue	6.0
Streambank Wheatgrass	Sodar	6.0
TOTAL		30.0

MIX II

SPECIES	VARIETY	LBS/ACRE
Thickspike Wheatgrass	Critana	4.75
Western Wheatgrass	Rosanna	4.75
Slender Wheatgrass	Revenue	4.75
Streambank Wheatgrass	Sodar	4.75
Fourwing Saltbush	-	1.5
Wyoming Big Sagebrush	-	0.5
Oakbrush Sumac	-	0.2
Woods Rose	-	0.8
Northern (Utah) Sweetvetch	-	0.1
Sainfoin	Eski	1.5
Cicer Milkvetch	Lutana	1.4
Palmer Penstemon	Cedar	0.5
Blanket Flower	-	0.5
Lewis Blue Flax	Appar	1.5
Munro Globemallow	-	0.5
California Poppy	-	2.0
TOTAL		30.0

Project Location Map

